UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,970	03/19/2001	Thomas Zermani	MCA-508 US	9265

25182 7590 03/29/2004

MILLIPORE CORPORATION
290 CONCORD ROAD
BILLERICA, MA 01821

EXAMINER	
OCAMPO, MARIANNE S	
ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/811,970	ZERMANI ET AL.	
	Examiner	Art Unit	
	Marianne S. Ocampo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,10,11,16,24,26 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,10,11,16,24,26 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Previously Indicated Allowable Subject Matter

1. Previous rejection of claim 27 under 35 U.S.C. 112, second paragraph, for lacking proper antecedent basis for the term "each layer of filter", has been withdrawn. Newly found prior art, US 5,824,218 to Gasser et al., has been used to reject claim 27 and claims 1 – 6, 10 – 11, 16, 24 and 26 are also rejected using the previously applied prior art and in combination with Gasser et al. (218) and the rejections are as follow:

Claim Objections

2. Claims 10 and 11 are objected to because of the following informalities:

a). In claim 10, the word "are" in line 2 after the word "filter" and before the word "made", should be changed to "is".

b). In claim 11, the phrase "the one or more pieces of filter are" in line 1, should be changed to "the at least one piece of filter is", in order to avoid inconsistencies between the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Gasser et al. (US 5,715,741).

5. With regards to claim 1, Gasser et al. disclose a filtration device comprising:

- at least one well (defined by the pot wall 1), each well having an open top and a closed bottom having one or more holes (3) which allow liquid to pass through,
- at least one piece of filter (in this instance, one filter element 2), positioned within each well and against the bottom (5) of the well (1) and a
- a mechanical interlock (formed by a portion of the inner wall of the well (1) formed integrally with the wall 1, 5, as in figure 9) formed against a top of the filter (2) and,
- the well (1) being formed of plastic and the interlock being one *skive* (the term "skive" being that this term is not a widely accepted term in the art of sealing, the examiner has broadly defined and considered the term to mean any structure or bead of material which can form an

interlock to prevent movement of the filter away from the bottom of the well or a mechanical structure which retains the filter within the well), as in fig. 9 and cols. 5 – 7.

6. With respect to claim 2, Gasser et al. have disclosed the limitations of claim 1 above. Gasser et al. also disclose at least a portion of the inner wall (the lower portion towards the collar 5) being tapered inwardly as it progresses from the top of the well (1) toward the bottom of the well, as also in figure 9.

7. Concerning claim 3, Gasser et al. have disclosed the limitations of claim 1 above. Gasser et al. further disclose at least a portion of the inner wall (the lower portion towards the collar 5) being tapered inwardly as it progresses from the top of the well toward the bottom of the well, wherein the taper is from about 0 degrees toward the vertical center line of the well to about 20 degrees toward the vertical center line of the well, as in fig. 9.

8. Regarding claim 10, Gasser et al. have disclosed the limitations of claim 1 above. Gasser et al. also disclose the at least one piece of filter (2) being made from a metallic material, as in col. 5, lines 15 – 21.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gasser et al. (741).

11. Regarding claim 4, the limitation "about 7 degrees" is considered indefinite by the examiner. It is unclear what value is being referred by this phrase. Is it a value of 7 degrees (as mentioned in the original specification page 4, 2nd paragraph, line 3, or a value greater than 7 degrees (i.e. from 8 up to 20 degrees) or a value less than 7 degrees (i.e. from 6 degrees to 0)? Gasser et al. have disclosed the limitations of claim 1 above. Although Gasser et al. does not explicitly disclose the taper being about 7 degrees toward a vertical center line of the well (1), the taper (of the inner wall of the well (1), is measured to be less than 10 degrees, specifically between about 6 to 8 degrees, as in fig. 9, which would include about 7 degrees as claimed in claim 4. It is considered in this instance where claimed ranges (i.e. about 7 degrees) "overlap or lie inside ranges disclosed by the prior art" (i.e. lie in the disclosed range of about 6 – 8 degrees

or less than 10 degrees as in fig. 9 of Gasser et al.), a prima facie case of obviousness exists. See case laws, ***In re Wertheim***, 541 F.2d 257, 191 USPQ 90 (CCPA 1976) and ***In re Woodruff***, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) and ***In re Geisler***, 116 F.3d 1465, 1469-71, 43 USPQ2d 1362, 1365-66 (Fed. Cir. 1997), and MPEP 2144.05, section I.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gasser et al. (741) in view of Gasser et al. (US 5,824,218) and Hawley's Condensed Chemical Dictionary.

13. Concerning claim 11, Gasser et al. have disclosed the limitations of claim 1 above. Gasser et al. (741) fail to disclose the at least one piece of filter (2) being made of a polymeric (i.e. plastic) material recited in claim 11.

14. Gasser et al. (218) teach a similar filtration device to that of Gasser et al. (741), the filtration device of Gasser et al. (218) including at least one piece of filter (1, 2) disposed within a well (5, 6), the well (6) having an open top and a closed bottom having one or more holes (9, 10) for allowing liquid to pass therethrough, the at least one piece of filter (1, 2) positioned against the bottom of the well (5, 6), and a mechanical interlock (in the form of a plastic bead 3 material) against a top and a bottom of the at least one piece of filter, the well being formed of plastic and the at least one piece of filter (1, 2) being made of plastic material, as in cols. 3 – 4 and figs. 1 – 7.

It is considered obvious to one of ordinary skill in the art to modify the material of construction of the filter of Gasser et al. (741), by adding the embodiment (a plastic/polymeric

material for the filter), as taught by Gasser et al. (218), in order to provide an alternative and improved material of construction for the filter, which is not only reusable but also light-weight and more inexpensive [see cols. 1 – 2 of Gasser et al. (218)] than its metallic counterparts [as the one taught by Gasser et al. (741)].

15. Although Gasser et al. (741), as modified by Gasser et al. (218), do not teach explicitly the plastic/polymeric material being one of those in claim 11, such as cellulose acetate, it is considered obvious to one of ordinary skill in the art, depending on the inherent characteristics of the plastic/polymeric material which is desirable for a specific filtration application, the type of plastic used could be any one of those claimed in claim 11. For instance, cellulose acetate is known for its use as a filter membrane and notable for its toughness, high-impact strength and ease of fabrication (see Hawley's Condensed Chemical Dictionary, page 228 for properties of cellulose acetate).

16. Furthermore, the case law ***In re Leshin***, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) stated that a prima case of obviousness exists in a selection of a known plastic (such as those mentioned in claim 11) to make a container of a type made of plastics prior to the invention.

17. Claims 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gasser et al. (741) in view of Gasser et al. (US 5,824,218).

18. With regards to claim 24, Gasser et al. (741) have disclosed the limitations of claim 1 above. Gasser et al. fail to disclose the at least one piece of filter being multiple pieces with the one or more skives being on top of an upper surface of the uppermost filter.

19. Gasser et al. (218) teach a similar filtration device to that of Gasser et al. (741), the filtration device of Gasser et al. (218) including multiple pieces of filter (two are shown, namely 1 & 2) disposed within a well (5, 6), the well (6) having an open top and a closed bottom having one or more holes (9, 10) for allowing liquid to pass therethrough, the filters (1 & 2) positioned against the bottom of the well (5, 6), and one or more mechanical interlocks/skives (in the form of a plastic bead 3, 11 material is integral with the plastic well 14, 6, in figures 4 & 6) against a/on top of an upper surface of the uppermost filter (1) and against a/on the bottom of the other filter (2), the well being formed of plastic and the filters (1 & 2) may be made of plastic material, as in cols. 3 – 4 and figs. 4 & 6.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the number of filter elements (i.e. pieces of filter) from one to more than one (i.e. multiple/plurality thereof) for a multiplied effect, in this instance, to increase available filtration surface area and for a longer life/usage of the filtration device. The case law, ***In re Harza*** [274 F.2d, 124 USPQ 378 (CCPA 1960)], has provided that, in which a mere duplication of parts [in this instance, duplication of the filter pieces from one to more than one (multiple pieces)] for a multiplied effect does not carry any patentable weight or significance unless a new or unexpected result is produced. See also M.P.E.P. section 2144.04 part VI paragraph B.

20. Concerning claim 27, Gasser et al. (741) disclose a filtration device comprising:

• at least one well (defined by the pot wall 1), each well having an open top and a closed bottom having one or more holes (3) which allow liquid to pass through,

• at least one piece of filter (in this instance, one filter element 2), positioned within each well and against the bottom (5) of the well (1) and a

• a mechanical interlock (formed by a portion of the inner wall of the well (1) formed integrally with the wall 1, 5, as in figure 9) formed against a top of the filter (2) and,

• the well (1) being formed of plastic and the interlock being one *skive* (the term "skive" has been broadly defined and considered by the examiner to mean any structure or bead of material which can form an interlock to prevent movement of the filter away from the bottom of the well or a mechanical structure which retains the filter within the well), as in fig. 9 and cols. 5 – 7.

Gasser et al. (741) fail to disclose the at least one piece of filter being multiple pieces of filter sequentially arranged in the well and sealed to the well by a skive formed between each piece of filter.

21. Gasser et al. (218) teach a similar filtration device to that of Gasser et al. (741), the filtration device of Gasser et al. (218) including multiple pieces of filter (two are shown, namely 1 & 2) sequentially arranged within a well (5, 6) and sealed to the well, the well (6) having an open top and a closed bottom having one or more holes (9, 10) for allowing liquid to pass therethrough, the filters (1 & 2) positioned against the bottom of the well (5, 6), and one or more mechanical interlocks/skives (in the form of a plastic bead 3, 11 material is integral with the

plastic well 14, 6, in figures 4 & 6) sealing each piece of filter (1 & 2) and formed between each piece of filter (1 & 2, as in fig. 2 & 4), and the well being formed of plastic and the filters (1 & 2) may also be made of plastic material, as in cols. 3 – 4 and figs.1 - 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the number of filter elements (i.e. pieces of filter) from one to more than one (i.e. multiple/plurality thereof) for a multiplied effect, in this instance, to increase available filtration surface area and for a longer life/usage of the filtration device. The case law, ***In re Harza*** [274 F.2d, 124 USPQ 378 (CCPA 1960)], has provided that, in which a mere duplication of parts [in this instance, duplication of the filter pieces from one to more than one (multiple pieces)] for a multiplied effect does not carry any patentable weight or significance unless a new or unexpected result is produced. See also M.P.E.P. section 2144.04 part VI paragraph B.

22. Alternatively, claims 1, 5 – 6, 10 – 12, 16, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zermani (US 6,309,605 B1) in view of DeSalvo (US 5,284,586).

23. Concerning claim 1, Zermani discloses a filtration device (1) comprising:

- at least one well (2), each well (2) having an open top (bounded by planar portion 3) and a closed bottom (5) having one or more holes (6) which allow liquid to pass through
- at least one piece of filter (8 or 27) positioned within each well (3) and against the bottom (5) of each well (2);

• a mechanical interlock [in the form of a bead of molten or liquid material (30) casted onto a top surface of the filter (27)] formed against a top of the filter (8, 27);

• the well (2) being formed of plastic and the interlock being one *skive* (the term "skive" being that this term is not a widely accepted term in the art of sealing, the examiner has broadly defined and considered the term to mean any structure or bead of material which can form an interlock to prevent movement of the filter away from the bottom of the well or a mechanical structure which retains the filter within the well), as in cols. 3 - 9 and figs. 1 - 7.

24. In this alternative rejection, Zermani fails to disclose the interlock being one or more skives ("skives" according to the definition given by the applicants, which is *portions of the inner wall of the well that have been skived (cut) and continuously rolled along the wall until it reaches the location of the filter to hold in place/retain the filter in the well*, as in the sixth paragraph of page 6 of the applicants' response which is dated 1-6-04 and filed on 1-8-04. In this case, claim 1 is being considered a product by process claim. The patentability of a product by process claim is based upon the product itself, eventhough the claim is limited and defined by process (in this instance, how the mechanical interlock is being formed or made, i.e. as a "skive" or by skiving down a portion of the inner surface of the wall and rolling the skived portion continuously to hold the filter piece in place in the well, as defined by the applicants' response (6^{th} paragraph, page 6 of response filed on 1-8-04), and therefore, the product in such a claim is unpatentable if it is the same as, or obvious from the product of the prior art, even if the product of the prior art had been made by a different process. *See **In re Thorpe**, et al., No. 85-1913 (11-21-85) 227 USPQ pages 964 – 966.* The mechanical interlock, which is in the form of a sealing

gasket or bead of material cast on top of the filter, of the prior art is formed by thermal bonding, plastic casting and/or gluing techniques, as taught by the prior art (Zermani, col. 6, lines 45 – 67 & cols. 7 – 8), and performs the same exact function of a "skive", that is to retain or lock the filter (8, 27) in place within the well (2), the interlock being against the top of the filter in order to hold the filter against the bottom (5) of the well (see figures 6 – 7). Although Zermani does not teach the skiving of the inner surface of the well and rolling the skived off portion to form a "skive" (i.e. the interlock which would keep the filter (8) in the well against the bottom (5) of the well), it is considered that the claimed invention (which is a filtration device having at least one well and at least one piece of filter positioned therein and a mechanical interlock(which is one or more *skives*) against a top of the filter and the well being formed of plastic) is the same as, or at least an obvious variation of the filtration device of the prior art (Zermani), even if the filtration device (product) of the prior art (Zermani) had been made by a different process.

25. Furthermore, it is also well known in the art of forming a filtration device the method of forming a mechanical interlock (in this instance, forming a retaining bead or seal as a *skive*) as defined by the applicants in their response (i.e. using *a punching pin to drive against a cavity/bore of a well such that the punching pin cuts (skives) a portion of the wall of the cavity and pushes (rolls down) that portion continuously downwards to form a* mechanical interlock) to lock a filter in a well (i.e. depression or a container or vessel which could also any cup-shaped cavity/vessel having at least one opening at a bottom portion thereof) or a skive type of interlock being claimed by the applicants, as evidenced by De Salvo (US 5,284,586). DeSalvo teaches a mechanical interlock in the form of at least one skive (annular ring 26 formed from having a

punching pin driving through a bore of a well 12 and rolling a portion of the inner wall of the bore downwards to lock a filter (20) in the well 12) which locks a filter (20) in a well (12) having an open top and a closed bottom having at least one hole/opening covered by the filter (20), as in fig. 4 and in cols. 2 – 4 and in claims 1 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the (method of forming the) interlock used in the filtration device of Zermani, by adding the embodiment taught by DeSalvo, in order to provide an alternative type/design for the interlock which is as effective in locking the filter in the well, but can be formed in a simpler manner and costs less to manufacture (see col. 2, lines 64 – 68 of DeSalvo), compared to the sealing gasket/interlock (formed by thermal bonding or adhesives or casting) of Zermani.

26. Regarding claim 5, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani further discloses at least a portion of the inner wall being tapered outwardly as it progresses from the top of the well (near the opening) toward the bottom of the well (where the filter sits or in the vicinity of the filter 27), and the taper is from about 0 degrees toward a vertical center line of the well to about –20 degrees toward the vertical center line of the well, as in fig. 6.

27. With regards to claim 6, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Although Zermani, as modified by DeSalvo, fails to teach the angle of the tapering outwardly of the at least a portion of the inner wall being about –7 degrees

towards a vertical center line of the well, it is considered obvious to one of ordinary skill in the art at the time of the invention, to modify the tapering outwardly of the at least a portion of the inner wall of the well to any desired value, in particular about –7 degrees, as a matter of choice of the user, as well as depending upon the shape (i.e. degree of tapering of the sides) of the filter being placed in the well. If the filter has sides which taper outwardly to about –7 degrees, then to form the at least a portion of the inner wall to that specific degree of taper would be obvious in order to properly seat the filter in place in the well.

28. Concerning claim 10, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani further discloses the at least one piece of filter (8, 27) being made from a polymeric material, as in cols. 5 – 6.

29. With respect to claim 11, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani also discloses the at least one piece of filter (8, 27) being made from a polymeric material selected from the following group of material consisting of nitrocellulose, cellulose acetate, polysulphones, polyethersulphones, polyarylsulphones, polyvinylidene fluoride, polyolefins, polyamides, PTFE, thermoplastic fluorinated polymers and polycarbonates, as in cols. 5 – 6.

30. With regards to claim 16, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani also discloses the device (1) having a number of wells (2) selected from the group consisting of 96, 384 and 1536, as in col. 6, lines 18 – 37.

31. Concerning claim 24, Zermani, as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani also discloses the at least one piece of filter being multiple (more than one) pieces and at least one seal/skive (interlock) being formed at least on top (as in fig. 6) of an upper surface of an uppermost filter, as in col. 5, lines 14 – 20. See case law, ***In re Harza*** [274 F.2d, 124 USPQ 378 (CCPA 1960)] in which a mere duplication of parts (in this instance, duplication of the filter pieces from one to more than one/multiple pieces) for a multiplied effect (in this instance, greater filtration surface area and longer filter span) does not carry any patentable weight or significance unless a new or unexpected result is produced. See also M.P.E.P. section 2144.04 part VI paragraph B.

32. Regarding claim 26, Zermani discloses a filtration device (1, a multiwell plate) comprising:

- 96 wells (2), as in col. 6, lines 22 – 33, and each well (2) having an open top (bounded by planar portion 3) and a closed bottom (5) having one or more holes (6) which allows liquid to pass through,
- at least one piece of filter (8, 27) positioned within each well (3) and against the bottom (5) of each well (2), and

• a mechanical interlock (in the form of a sealing gasket 30) against a top of the filter (8, 27) and the well (2) being formed of plastic (thermoplastic) and the interlock (30) being a portion of the well (i.e. those portions surrounding the sealing surface of the filter, which would be along and adjacent to the outer peripheries of the filter 8, see col. 7, lines 4 - 20) which could be formed continuously from at least a portion of an inner wall of the well and the interlock remaining attached to and as a portion of the inner wall, the portion of the well being thermally bonded to the sealing surface of the filter (8), as in figure 6 and col. 7.

Zermani fails to disclose the interlock being one or more skives ("skives" according to the definition given by the applicants, which is *portions of the inner wall of the well that have been skived (cut) and continuously rolled along the wall until it reaches the location of the filter to hold in place/retain the filter in the well*, as in the sixth paragraph of page 6 of the applicants' response which is dated 1-6-04 and filed on 1-8-04. In this case, claim 26 is being considered a product by process claim. The patentability of a product by process claim is based upon the product itself, eventhough the claim is limited and defined by process (in this instance, how the mechanical interlock is being formed or made, i.e. as a "skive" or by skiving down a portion of the inner surface of the wall and rolling the skived portion continuously to hold the filter piece in place in the well, as defined by the applicants' response (6^{th} paragraph, page 6 of response filed on 1-8-04), and therefore, the product in such a claim is unpatentable if it is the same as, or obvious from the product of the prior art, even if the product of the prior art had been made by a different process. *See **In re Thorpe**, et al., No. 85-1913 (11-21-85) 227 USPQ pages 964 – 966.*

33. The mechanical interlock, which is in the form of a sealing gasket or bead of material cast (by thermally heating a portion of the well) on top of the filter, of the prior art is formed by thermal bonding, plastic casting and/or gluing techniques, as taught by the prior art (Zermani, col. 6, lines 45 – 67 & cols. 7 – 8), and performs the same exact function of a "skive", that is to retain or lock the filter (8, 27) in place within the well (2), the interlock being against the top of the filter in order to hold the filter against the bottom (5) of the well (see figures 6 – 7). Although Zermani does not teach the process of skiving of the inner surface of the well and rolling the skived off portion to form a "skive" (i.e. the interlock which would keep the filter (8) in the well against the bottom (5) of the well), it is considered that the claimed invention (which is a filtration device having at least one well and at least one piece of filter positioned therein and a mechanical interlock(which is one or more *skives*) against a top of the filter and the well being formed of plastic) is the same as, or at least an obvious variation of the filtration device of the prior art (Zermani), even if the filtration device (product) of the prior art (Zermani) had been made by a different process.

34. Furthermore, it is also well known in the art of forming a filtration device the method of forming a mechanical interlock (i.e. forming it as a skive) as defined by the applicants in their response filed 1-8-04 (i.e. forming a *skive (by means of a punching pin driving against a cavity/bore of a well such that the punching pin cuts a portion of the wall of the cavity and pushes (rolls down) that portion continuously downwards to form a* mechanical interlock) to lock a filter in a well (i.e. depression or a container or vessel which could also any cup-shaped

cavity/vessel having at least one opening at a bottom portion thereof) or a skive type of interlock being claimed by the applicants, as evidenced by De Salvo (US 5,284,586). DeSalvo teaches a mechanical interlock in the form of at least one skive (annular ring 26 formed from having a punching pin driving through a bore portion of the inner wall of the bore of a well 12 and rolling a portion of the inner wall of the bore downwards to lock a filter (20) in the well 12) which locks a filter (20) in a well (12) having an open top and a closed bottom having at least one hole/opening covered by the filter (20), as in fig. 4 and in cols. 2 – 4 and in claims 1 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the (method of making of the) interlock used in the filtration device of Zermani, by adding the embodiment taught by DeSalvo, in order to provide an alternative design for the interlock which is as effective in locking the filter in the well, but can also be formed in a simpler manner and costs less to manufacture (see col. 2, lines 64 – 68 of DeSalvo), compared to seals/interlocks of Zermani.

35. Claims 2 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zermani and DeSalvo, as applied to claim1 above, and further in view of Cohen et al. (US 3,730,352).

36. Concerning claims 2 – 4, Zermani as modified by DeSalvo, has taught the limitations of claim 1 above. Zermani as modified by DeSalvo, fail to teach at least a portion of the inner wall being tapered inwardly as it progresses from the top of the well toward the bottom of the well (claim 2), wherein the taper is from about 0 degrees toward a vertical center line of the well

to about 20 degrees towards the vertical center line (claim 3), or the taper is about 7 degrees toward the vertical center line of the well (claim 4).

37. Cohen et al. teach a filtration device (14) (i.e. multi-well plate) similar to that of Zermani, comprising at least one well (46), wherein each of the well (46) has an open top and a closed bottom (being closed by the filter 40, 42) having at least one or more holes for a fluid/liquid to pass through, and a mechanical interlock formed by at least a portion of an inner wall of the well (46), and the at least a portion of the inner wall being tapered inwardly (i.e. forming a frustoconical shape) as it progresses from the top of the well toward the bottom of the well, as in figs. 3 – 4 and cols. 1 – 8 (claim 2).

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filtration device of Zermani as modified by DeSalvo, by adding the embodiment taught by Cohen et al., in order to provide an improved filtration device which has the ability to increase the rate of filling of the wells (col. 6, lines 21 – 22 of Cohen et al.), thereby increasing the rate of filtration of liquid therethrough. With regards to the degree of tapering of at least a portion of the inner wall, i.e. having a taper of from about 0 degrees toward a vertical center line of the well to about 20 degrees towards the vertical center line (claim 3), or the taper is about 7 degrees toward the vertical center line of the well (claim 4), it is considered a matter of choice of the user, and the tapering being a result-effective variable, in which the values of from about 0 degrees toward a vertical center line of the well to about 20 degrees towards the vertical center line (claim 3), and/or about 7 degrees toward the vertical center line of the well (claim 4), are considered optimum values of the result-effective variable, which serve to increase/decrease the

rate of flow through the well. If the user of the well desired the flow of liquid to be faster through the well, an increased/dramatic tapering (up to 20 degrees) toward the vertical center line should be the taper of the inner wall. However, if the user desired a much slower (but not stagnant) flow rate of liquid, then a taper of about 7 degrees might be sufficient.

38. Alternatively, claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gasser et al. (741) in view of Gasser et al. (218) and DeSalvo (586).

39. Concerning claim 27, Gasser et al. (741) disclose a filtration device comprising:

- at least one well (defined by the pot wall 1), each well having an open top and a closed bottom having one or more holes (3) which allow liquid to pass through,
- at least one piece of filter (in this instance, one filter element 2), positioned within each well and against the bottom (5) of the well (1) and a
- a mechanical interlock (formed by a portion of the inner wall of the well (1) formed integrally with the wall 1, 5, as in figure 9) formed against a top of the filter (2) and,
- the well (1) being formed of plastic and the interlock being one *skive* (the term "skive" has been broadly defined and considered by the examiner to mean any structure or bead of material which can form an interlock to prevent movement of the filter away from the bottom of the well or a mechanical structure which retains the filter within the well), as in fig. 9 and cols. 5 – 7.

Gasser et al. (741) fail to disclose the at least one piece of filter being multiple pieces of filter sequentially arranged in the well and sealed to the well by a skive formed between each piece of filter.

40. Gasser et al. (218) teach a similar filtration device to that of Gasser et al. (741), the filtration device of Gasser et al. (218) including multiple pieces of filter (two are shown, namely 1 & 2) sequentially arranged within a well (5, 6) and sealed to the well, the well (6) having an open top and a closed bottom having one or more holes (9, 10) for allowing liquid to pass therethrough, the filters (1 & 2) positioned against the bottom of the well (5, 6), and one or more mechanical interlocks/skives (in the form of a plastic bead 3, 11 material is integral with the plastic well 14, 6, in figures 4 & 6) sealing each piece of filter (1 & 2) and formed between each piece of filter (1 & 2, as in fig. 2 & 4), and the well being formed of plastic and the filters (1 & 2) may also be made of plastic material, as in cols. 3 – 4 and figs.1 - 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the number of filter elements (i.e. pieces of filter) from one to more than one (i.e. multiple/plurality thereof) for a multiplied effect, in this instance, to increase available filtration surface area and for a longer life/usage of the filtration device. The case law, ***In re Harza*** [274 F.2d, 124 USPQ 378 (CCPA 1960)], has provided that, in which a mere duplication of parts [in this instance, duplication of the filter pieces from one to more than one (multiple pieces)] for a multiplied effect does not carry any patentable weight or significance unless a new or unexpected result is produced. See also M.P.E.P. section 2144.04 part VI paragraph B.

41. Gasser et al., as modified by Gasser et al., fail to disclose the interlock being one or more skives ("skives" according to the definition given by the applicants, which is *portions of the inner wall of the well that have been skived (cut) and continuously rolled along the wall until it reaches the location of the filter to hold in place/retain the filter in the well*, as in the sixth paragraph of page 6 of the applicants' response which is dated 1-6-04 and filed on 1-8-04. In this case, claim 27 is being considered a product by process claim. The patentability of a product by process claim is based upon the product itself, eventhough the claim is limited and defined by process (in this instance, how the mechanical interlock is being formed or made, i.e. as a "skive" or by skiving down a portion of the inner surface of the wall and rolling the skived portion continuously to hold the filter piece in place in the well, as defined by the applicants' response (6^{th} paragraph, page 6 of response filed on 1-8-04), and therefore, the product in such a claim is unpatentable if it is the same as, or obvious from the product of the prior art, even if the product of the prior art had been made by a different process. *See **In re Thorpe**, et al., No. 85-1913 (11-21-85) 227 USPQ pages 964 – 966.*

42. The mechanical interlock, which is in the form of a sealing bead of material cast (by thermally heating a portion of the well) on top of the filter, of the prior art is formed by thermal bonding, as taught by the prior art (Gasser et al. (741), figure 9 and col. 7, or Gasser et al. (218), fig. 4), and performs the same exact function of a "skive", that is to retain or lock the filters (1 & 2) in place within the well (1 or 14), the interlock being against the top of the filters in order to hold the filters against the bottom of the well. Although Gasser et al, as modified by Gasser et al., do not teach the process of skiving of the inner surface of the well and rolling the skived off

portion to form a "skive" (i.e. the interlock which would keep the filter (8) in the well against the bottom (5) of the well), it is considered that the claimed invention (which is a filtration device having at least one well and at least one piece of filter positioned therein and a mechanical interlock (which is one or more *skives/bead of material*) against a top of the filter and the well being formed of plastic) is the same as, or at least an obvious variation of the filtration device of the prior art (Gasser et al. 741 and Gasser et al. 218), even if the filtration device (product) of the prior art had been made by a different process.

43. Furthermore, it is also well known in the art of forming a filtration device the method of forming a mechanical interlock (i.e. forming it as a skive) as defined by the applicants in their response filed 1-8-04 (i.e. forming a *skive (by means of a punching pin driving against a cavity/bore of a well such that the punching pin cuts a portion of the wall of the cavity and pushes (rolls down) that portion continuously downwards to form a* mechanical interlock) to lock a filter in a well (i.e. depression or a container or vessel which could also any cup-shaped cavity/vessel having at least one opening at a bottom portion thereof) or a skive type of interlock being claimed by the applicants, as evidenced by De Salvo (US 5,284,586).

44. DeSalvo teaches a mechanical interlock in the form of at least one skive (annular ring 26 formed from having a punching pin driving through a bore portion of the inner wall of the bore of a well 12 and rolling a portion of the inner wall of the bore downwards to lock a filter (20) in the well 12) which locks a filter (20) in a well (12) having an open top and a closed

bottom having at least one hole/opening covered by the filter (20), as in fig. 4 and in cols. 2 – 4 and in claims 1 – 4.

It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the (method of making of the) interlock used in the filtration device of Gasser et al., as modified by Gasser et al., by adding the embodiment taught by DeSalvo, in order to provide an alternative design for the interlock which is as effective in locking the filter in the well, but can also be formed in a simpler manner and costs less to manufacture (see col. 2, lines 64 – 68 of DeSalvo), compared to seals/interlocks of Gasser et al. (741) and Gasser et al. (218).

Response to Arguments and Amendments

45. Applicants' arguments and amendments filed on 1-8-04 with respect to claims 1 –4, 10 – 11, 24 and 27 have been considered but are moot in view of the new grounds of rejection based on Gasser et al. (US 5,715,741) and in combination with newly applied art, Gasser et al. (US 5,824,218), and with respect to claims 1 – 6, 10 – 11, 16, 24 and 26, the arguments filed on 1-8-04, regarding the combination of prior art references, namely Zermani (US 6,309,605), DeSalvo (US 5,284,586) and Cohen (3,730,352), the arguments are deemed unpersuasive.

46. In response to applicant's arguments against the references (i.e. Zermani, DeSalvo and Cohen et al.) individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642

F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the combination of Zermani and DeSalvo, has been set forth at the end of the rejection of claims 1 and 26, in particular, the provision of a seal which is simpler and less costly to manufacture, as well as tamper-resistant, and provides a greater strength retention of the filter, given by DeSalvo, particularly in cols. 1, lines 35 – 39 and col. 2, lines 60 – 68. Applicants further argue that the combination of Zermani and DeSalvo would not result to a formation of a skive, but rather to a formation of a mechanical *crimp* (see page 10, 3rd paragraph of the response filed on 1-8-04). Applicants are asked to refer to page 2, last sentence of the second paragraph of the instant/original disclosure. In this disclosure, applicants have referred to the "skive" of the claimed invention as a mechanical crimp to retain the filter within the device. The only difference that the examiner can detect from what the applicants are trying to argue and that of the resulting product of the combination of Zermani and DeSalvo (prior art) is the amount of material skived off, in this case, a number of layers of material that is formed by the rolling off of the skived portion (as shown in applicants' fig. 4). In any rate, the so-called mechanical "crimp" or flange-like downwardly extending seal/skive that is taught by DeSalvo is

indeed formed as a continuous roll (without breaking off from the inner wall). Regarding the tertiary reference (Cohen et al.), in the rejection of claims 2 – 4, the tertiary reference is merely being used to show that tapering inwardly of the well. With regards to the mechanical interlock/skive, once again, applicants are asked to review the arguments and rejections with regards to the combination of Zermani and DeSalvo above.

47. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "**a continuous roll of inner wall material**...to hold the filter piece in place with the well") ***is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.*** See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

48. In response to the arguments regarding the interpretation of the term "skive" (note that this term "skive" is not particularly known or accepted terminology in the art of forming seals/gaskets and does not have a specific configuration or refer to a particular type of seal, and therefore) the examiner has considered this term "skive" to include any mechanical interlocks which is equivalent in structure and/or function to that of the claimed invention and therefore, does not necessary exclude those formed by thermal bonding or gluing techniques.

Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. **In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023,**

1027-28 (Fed. Cir. 1997). *Limitations appearing in the specification but not recited in the claim are not read into the claim.* **In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969).** See also **In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)** (*"During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.*"). In this instance, applicants have yet still to narrow the claims to exclude any mechanical interlocks which are formed by a different process (i.e. not by skiving such as those formed by thermal bonding, gluing, casting, etc.).

49. Applicants have tried several times to argue and define that a "***skive***" can only be a mechanical interlock formed by a specific process (i.e. skiving off a portion of an inner wall of the filter casing (which is the well) and rolling that skived off portion), however, when the examiner reviewed the original disclosure, this term is simply just an interlock formed of a bead of material from (portion of) an inner wall which holds the filter in place within the well, and one process of forming such "skive" is by skiving off a portion of the inner wall of the well, and another process disclosed in the same/original specification is using heat to soften material of the inner wall and make it flow as a continuous piece (see page 7, lines 8 – 12). Since the base

claims (claims 1, 26 and 27) are considered to be product/apparatus by process claims, the patentability of a product by process claim is based upon the product itself, eventhough the claim(s) is (are) limited and defined by process (in this instance, the "skive" being a **bead** of wall material made by skiving off a portion of the inner wall of the well and rolling this skived off portion continuously), and therefore, the product in such a claim is unpatentable if it is the same as, or obvious from the product of the prior art, even if the product of the prior art had been made by a different process. *See **In re Thorpe**, et al., No. 85-1913 (11-21-85) 227 USPQ pages 964 – 966.* The "skive" is actually a structure which is a bead of material formed on top of the filter to hold the filter in place against the bottom of the well. Whether or not, this "skive" is formed by thermal bonding/heating or by a removable gasket or by any other method, the final product in this case which is a filtration device with a mechanical seal or interlock (formed by a skive) to hold a filter in place within a well, is the same or at least an obvious variation of the product of the prior art used in the rejections.

Conclusion

50. This action is **NON-FINAL.**

51. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (571) 272-

1144. The examiner can normally be reached on Mondays to Fridays from 8:30 A.M. to 4:30 P.M..

52. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

53. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.S.O.

Walker

W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700